

NAIAD



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NAIAD: Nature Insurance value: Assessment and Demonstration

- Funded by the European Commission under the H2020 Program
- Coordinated by the Duero River Basin Authority
- Dec 2016- May 2020
- Budget: M€ 5,081,176
- 23 Partners, 11 European Countries

Consortium:

3 Universities and Education research institutes
8 Research centres
4 Small/Medium size Enterprises with a focus on applied research
3 Public bodies with key competences in applied research
2 Public bodies with key competencies in management
2 Non-Profit involved in local development
1 Insurance sector



NAIAD Consortium



Project Purpose

Insurance Value of Ecosystems:
Potential of the NBS is reduce damage costs related to
Floods and Drought

How your organization contribute to a carbon-neutral and climate-resilience planet by 2050?

NAIAD Assumption: Ecosystems can contribute to mitigate extreme water risks & increase resilience of society in a context of climate change

NAIAD Objective: Demonstrate the Insurance Value of Ecosystems

**It's a concept (not refer to insurance as a financial instrument)*

= Role ecosystems can play in reducing water related risks as “**Natural Assurance Schemes**”

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NAIAD DEMOs

≠ HAZARDS

Flood
Drought
Water quality
Land subsidence

≠ SCALES

Micro (0.5ha)
Meso
Large (250km)

≠ ENVIRONMENT

Urban
Peri-urban
Rural

≠ Levels of DEVELOPMENT

Simulation *ex ante*
ex post analysis
Deployment
Replication

CITY OF ROTTERDAM

Cloudbursts, floods, droughts
Urban Area

THAMES BASIN

*Storm surges, urban drainage
flooding, fluvial flooding*
Peri-urban Area

LA BRAGUE BASIN

Floods (torrential floods)
Peri-Urban area

LEZ BASIN

Severe droughts
Urban area

MEDINA AQUIFER

*GW pollution, aquatic ecosystems
degradation, floods, droughts*
Rural area

CITY OF COPENHAGEN

Pluvial floods, sea level rise, rising water tables
Urban Area

CITY OF LODZ

*Water shortages, heat waves, pluvial
flooding, poor water quality*
Rural and Urban areas

GLINSCICA CATCHMENT

*Flooding, biodiversity loss, poor water quality,
GW depletion*
Rural and Urban areas

LOWER DANUBE

*Floods, desertification, riverbed erosion and
siltation, poor water quality*
Rural and Urban areas

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NAIAD Strategic Goals

- **Strategic Goal 1: Methodological Assessment**

Biophysical, Social and Economic Assessment at the Demonstration Sites (at different level)



Relevant decision support and planning

TOOLS and FRAMEWORKS

for NBS implementation

- **Strategic Goal 2: Testing frameworks/tools at 9 DEMOs**

Integration of the knowledge and testing at real environments: DEMOs



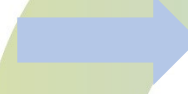
Apply the tools and Frames to gather relevant

EVIDENCES across the **DEMO** sites

on the insurance value of NBS

- **Strategic Goal 3: Policy uptake and exploitation**

Identify and address specific barriers and opportunities for the uptake of NBS



Recommendations and Guidelines to EU

Adaptation Strategy, EU GIS, Sendai F.

Facilitate knowledge exchange and policy dialogue to support

Policy, legal and **Regulatory Innovation**

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In parallel...

DEMO Workshops with Local Stakeholder

Risk Perception Assessment

Selection and Validation of NBS

Co-identification of Co-Benefits

Co-development of Indicators

Discussion on NBS Strategies

Co-Identification of Business Models



NAIAD FRAMEWORK

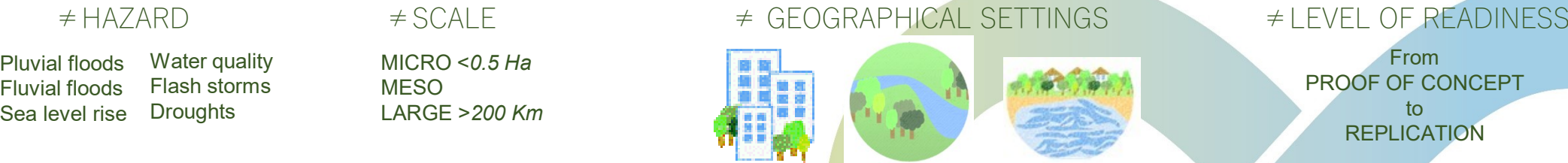


PROJECT OBJECTIVES

Demonstrate the role that Nature Based Solutions can play as an insurance system against the impacts from climate change



NAIAD DEMONSTRATION SITES



PROJECT RESULTS



NAIAD FRAMEWORK



EVIDENCE-
BASED

MULTI-
CRITERIA



NAIAD DEMONSTRATION SITES

City of Rotterdam, The Netherlands

HAZARD: Floods, Cloudbursts, Droughts
SCALE: Micro (Neighbourhood Spangen)
GEOGRAPHICAL SETTING: Urban
LEVEL OF READINESS: Operational and Replicated (TRL 9)
Overview of the DEMO and Case Study [HERE](#)

Lez Basin, France

HAZARD: Floods, Droughts
SCALE: Meso 29 Km River; 746 Km² Watershed
Geographical Setting: Rural-urban
LEVEL OF READINESS: Validated In Relevant Environment (TRL 5)
Overview of the DEMO and Case Study [HERE](#)

Thames Basin, United Kingdom

HAZARD: Floods
SCALE: Large 346 Km
GEOGRAPHICAL SETTING: Peri-urban
LEVEL OF READINESS: Operational and Replicated (TRL 9)
Overview of the DEMO and Case Study [HERE](#)

City of Copenhagen, Denmark

HAZARD: Floods, sea level rise
SCALE: Micro (Urban water management)
GEOGRAPHICAL SETTING: Urban
LEVEL OF READINESS: Demonstrated in relevant environment (TRL 6)
Overview of the DEMO and Case Study [HERE](#)

La Brague Basin, France

HAZARD: Floods
SCALE: MICRO-MESO 61 Km²
GEOGRAPHICAL SETTING: Peri-urban
LEVEL OF READINESS: Validated in relevant environment (TRL 5)
Overview of the DEMO and Case Study [HERE](#)

Lower Danube, Romania

HAZARD: Floods, Riverbank Erosion
SCALE: Large 250 Km²
GEOGRAPHICAL SETTING: Rural
LEVEL OF READINESS: Validated (TRL 4)
Overview of the DEMO and Case Study [HERE](#)

City of Łódź, Poland

HAZARD: Pluvial floods, droughts, water quality
SCALE: Micro (Urban water management)
GEOGRAPHICAL SETTING: Rural-urban
LEVEL OF READINESS: Validated (TRL4) and Operational and Replicated (TRL 9)
Overview of the DEMO [HERE](#)

Glinščica Catchment, Slovenia

HAZARD: Floods
SCALE: MICRO-MESO 20 Km²
GEOGRAPHICAL SETTING: Rural-urban
LEVEL OF READINESS: Validated (TRL 4)
Overview of the DEMO and Case Study [HERE](#)

Medina del Campo Aquifer, Spain

HAZARD: Drought, Water Quality
SCALE: Large 3.700 Km²
GEOGRAPHICAL SETTING: Rural
LEVEL OF READINESS: Demonstration in operational environment (TRL 7)
Overview of the DEMO and Case Study [HERE](#)

NAIAD Legacy

- **Frameworks and tools in support of NBS planning and implementation** (gathering **evidence** of the effectiveness of the measures implemented).
- **Incorporate NBS in *e.g.* river restoration plans and actions.**
 - Therefore, provide funding for NBS implementation
- **Training and capacity building**
- **Recommendation and evidences to policies/strategies** that support *e.g* river restoration actions based on NBS **according** to the Water Management Plan objectives.



Conclusions

Q: Climate and land use change + increasing asset values and distributions = increasing the risk of loss from flood damage, Q: Are NBS the solution?

*NBS/GI can provide the **resources for DRR**, but also **resilience** and **co-benefits**
No always: hybrid solutions, etc.*

Q: How do we develop locally adapted solutions in catchments and urban areas?
*Through **real evidence** + revisiting existing evidence is key*

Q: How can we address multi-disciplinary benefits?
***Integration of knowledge** (and disciplines) is key*

Q: How can we do more for less?
***Invest to prevent-** the “insurance value of ecosystems”*

Q: Do we need a reinsurance on these NBS ? (insurance of the ES) ?



THANKS!

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